Federal Extension Service
USDA

Collecting, Analyzing and Using Facts in Extension Program Development

"A good extension program will be based on the needs of people to make it useful and on the interest of people to make it effective." One of the accepted criteria for a good program development process is that there is a plan for collecting facts that will indicate real needs of people. Facts may be of a local, State, national or international nature. Extension workers have the responsibility of helping people with whom they work find and interpret facts which will point up problems. It is also important that facts be carefully analyzed and filtered in terms of their application in the proper setting. Too many facts presented at one time may serve to confuse and hamper the judgment of people in arriving at a true analysis of any given situation.

Any extension worker will do well to keep in mind that fact collecting is a continuous process. If a systematic routine plan is followed, a comprehensive file of information can be accumulated in every extension office. The county extension worker will need many more facts that are important for program development than will lay people at any given time.

What Facts are Needed; Sources of Facts; Methods of Collecting; Who Should Collect Facts; How to Analyze and Interpret Facts, are some points to consider in situation analysis.

Some Facts That Are Needed:

Facts about people for whom a program is planned.

What are the people like?

Educational level, social and economic levels, ages, size of family, social participation, health conditions, nationality and religious beliefs, traditions, desires, attitudes and occupations are all important in their relationship to program development.

Physical equipment and facilities available to people.

Information on housing, physical surroundings, equipment available, education, transportation, employment and health facilities, helps to determine needs of people.

Habits and practices.

What people do and how they do things are important in finding needs. Management of time, money and other resources; food and health habits; skills in homemaking and farming are all important.

Prepared by Jewell G. Fessenden and Ward F. Porter, Division of Extension Research and Training, for use in Extension Summer Schools 1956.

ER&T-176 (5-56)

Sources of Facts.

The sources are many.

Beginning with the people, where they are is important. Local needs and interests may come directly from the people in their own local communities. They may need to be made aware of needs not recognized by them.

The extension worker will then help people to recognize situations beyond local areas that are important to their own situation.

Census reports, other public agencies and departments such as health, education, welfare, libraries, governmental agencies, Land-Grant colleges, U.S.D.A., and many others.

Who Should Collect Facts.

Participation of people in planning their own programs is another accepted criteria for good program development. This participation can begin with collecting facts as a basis for defining problems.

If people study their own situation, they are more likely to accept results than if facts are given to them by someone else. Local leaders may very well contact a public health department to find out about health conditions and needs in a county or community. The same would be true for many other departments and agencies.

Responsibility is developed only by helping people to assume it. An extension worker's effort can be spread much further when many people share in the jobs to be done. Still more important is the development of leadership.

Therefore, State and county extension workers, local people, and leaders of many groups work together to assemble information needed for program planning purposes.

Methods of Collecting Facts.

The methods are many. Each has values and limitations. Some suggestions are:

Personal observation.

Extension workers have many opportunities for personal observation. The number of persons or items that can be observed is limited. Personal feelings and biases may also enter into one's own observations. However, observation can be very useful. A systematic plan for recording what is seen or heard helps to make observations more useful. "Look to see" and "listen to hear" are good slogans to keep in mind when observing. Writing down what one sees and

hears provides an accumulative record. A written record of an observation should show what was seen or heard, where it was seen or heard, how many times, who was involved. Problems or objectives being observed should also be kept in mind when observations are being made. A show of hands in meetings is very valuable if correctly used and results recorded and properly analyzed.

Check Sheets.

Check sheets are used to find interests, practices being used and other items. This method may be of value, even though it has limitations. It is an easy method to use and to tabulate. For the sake of simplicity and brevity, check sheets cannot contain enough items to give a complete picture of all possible interests people have.

It is a mistake to assume that results from a limited check sheet can be used exclusively to determine needs and interests, although they do have some value.

Questionnaires.

Questionnaires are used extensively by extension workers. All questionnaires, even the simplest, should be checked very carefully to be sure that the right information will be secured. There are usually research technicians at most Land-Grant colleges who can assist with checking questionnaires.

1. The question should be related directly to the purpose of the study. Check purposes to see if the question is needed.

2. Words in each question should be familiar to the person who is to answer.

3. Questions should be simple, short, clear and concise.

4. Questions should not be worded in such a way as to suggest answers.

5. Questions that have more than one idea should be avoided.

6. Definite time limits on answers should be specified; for example, "During the past year."

7. The respondent or cooperator should have an opportunity to indicate that the question does not apply to him or her, or for an alternative to a yes or no type of question.

8. Every questionnaire should be tested before being used.

Small Cards 5 x 8 inches

Small cards, with a few questions on each, can be used to collect information. This method has been used by some extension workers very successfully. These may be filled in at meetings by individuals or by agents as questions are asked. Leaders can be trained in the use of cards or questionnaires and thus participate in the process of collecting information.

Records and Report Forms.

Many types of records and reports are kept by club members and individual farmers and homemakers. Correct analysis and use of such records provide information for certain purposes. They may, of course, represent limited numbers and types of people, and this should be recognized when data are being interpreted.

Other Informal Methods

Informal questions may be printed on cards for individuals in a group to write replies in their own words. Names would not have to be signed. Examples of some questions that have been used are:

"Will you please write down the (farming) (homemaking) jobs that you have to do on which you would like more information?"

"What information or jobs have other people in your community (nonclub members) asked you about?" (This question is intended to get information from people other than those in groups.)

"What changes would you like to see in your community?"

"What changes would you like to make in your family life?"

"What changes would you like to make in your house or on your farm?"

"What things are of most concern to you?"

Questions like the above are indirect methods of getting some expressions of people's feelings about interests. Such techniques have yielded information that was not obtainable in open discussion or by the use of more formal methods.

Surveys.

Surveys are very valuable for obtaining information in a more intensive way. They are valuable for certain purposes, are more expensive and require skills not possessed by many extension workers. Surveys are not usually undertaken by the majority of extensio workers. Trained research people should be consulted for most surveys.

How to Analyze and Interpret Facts.

Facts should be very carefully analyzed as to their real meaning. Accuracy is important. Interpretation should be in terms of the items or people represented in terms of standards or objectives to be reached, possible potentials for the item being measured on the basis of need for the item or practice. As an example of this, if dietary data are to be analyzed, they should be interpreted in the light of an adequate diet -- not merely of individual foods eaten. Or, it may be more important to analyze the results of interest check sheets in terms of different age groups than to get totals only.

A good rule to remember is to decide just what it is you want to know before asking questions. The answers should then be analyzed so as to give the answers.

Facts should be interpreted in light of the following:

1. Possible potentials for the item being measured and in light of objectives.

   Example: If one is measuring the extent to which boys and girls 10 to 20 years of age in a county are enrolled in 4-H Clubs, the figures may be interpreted in terms of:

   (1) The total number of boys and girls in a county, 10 to 20 years of age, if the objective is to reach all boys and girls 10 to 20 years of age with 4-H Club work.

   (2) The total number of farm boys and girls 10 to 20 years of age in a county if only farm boys and girls are to be included in this objective.

   (3) The total number of boys and girls, 10 to 20 years of age, who want to become 4-H members.

   (4) The total number of boys and girls, 10 to 20 years of age, who are enrolled in rural schools.

   After one has decided on the objective, then the potential number of boys and girls represented in the objective would be used as a basis for analysis.

   Illustration: If only farm boys and girls are to be enrolled, then the total number of farm boys and girls 10 to 20 years of age, in the county will be the basis for analyzing. One would first have to determine how many farm boys and girls are currently enrolled in 4-H Club work and how many there are in the given county. If there are 1,800 farm boys and girls, 10 to 20 years of age, in a county and 800 farm boys and girls are enrolled in 4-H Clubs, the picture would be that 44 percent of all farm boys and girls, 10 to 20 years of age, in the county are 4-H Club members. The same principle would apply to any of the other possible potentials mentioned in (1), (2), (3) and (4) above.

Example 2: An agent may want to know what percentage of women in the county 20 years of age and over are enrolled in organized home demonstration groups and the proportion in certain age groups. Again the potentials would be considered. For example, one would need to know:

(1) The number of women 20 years of age and over in a county.

(2) The number and percentages in each age group in the county.

(3) The number and percentages in each age group enrolled in clubs.

Census figures would be used as a basis for comparison.

Illustration: If there are 1,807 women in a county who are 20 years of age and over, this figure would be used as a basis for analysis. There may be 253 club members in the county.

The following tables show how the data would be analyzed. The first table shows the number and percentage of women by age groups who are in all clubs in a county.

Potential in County to be Reached.

Table 1.--Ages of Women in Home Demonstration Clubs.

	Numbers and percentages in certain age group	
Age Group	Number	Percentage
20-29	45	18
30-39	85	34
40-49	62	24
50-59	33	13
60 years and over	28	11
Total	253	100

Table 2.--Comparison of Age Groups of Women in Clubs With Those of Total in County.

Numbers and Percentages

Age Group	No. in county of this age 1950 Census	Percentage of total in county of this age 1950 Census	Total No. of this age in all clubs in county	Percentage of total in county this age in clubs
20 - 29	457	25	45	10
30 - 39	424	24	85	20
40 - 49	310	17	62	20
50 - 59	296	16	33	11
60 years and over	320	18	28	9
Total	1,807	100	253	Does not add up to 100

Instructions for getting information for last two columns in Table 2

To get total number in all clubs in county in each age group, take the percentage for each age group of club members in sample which will be in Table 1, third column.

From Table 1

If the percentage of club members, 20-29 years of age, in the survey sample is 18, then take 18 percent of the total club membership to get the figure that would be placed in the column opposite the age group, 20-29, and under the heading, "Total number in all clubs in county" next to last column in Table 2.

An explanation of this calculation would be:

(1) If there were 88 members in the survey and 16 were 20-29 years of age, this would be 18 percent.

If there were 253 club members in the county, 18 percent of 253 would be 45, or the total number of club members in the county 20-29 years of age, 45 would be the number to go in the next to the last column of Table 2 opposite the age group 20-29.

(2) If census data showed that there were 457 women 20-29 years of age in the county, then 45 (number of women this age in the club) would be about 10 percent of all women of this age enrolled in the clubs, and so on for the other age groups.

Note: This same procedure would be followed for other age groups and for educational and income levels if desired.

Example 3: A county agent may want to know the extent to which farmers in his county have been following recommendations for controlling internal parasites in sheep. He would first want to know the number of farmers in the county selling sheep and lambs. This is shown in Table 3 below:

Table 3. Number and Percent of Farms in Sample and in X County Selling Sheep and Lambs in 1950.

Type of farms	Number of farms (county) 1 /	Percent of farms (county)	Number of farms (sample)	Percent of farms (sample)
All farms	1,114	100	202	100
Selling sheep and lambs	654	59	118	58
Other	460	41	84	42

1 / Based on 1950 Census of Agriculture

The next table shows the proportion of the farmers using the practice:

Table 4.--Use of Phenothiazine and Salt on Farms in Sample and in X County, 1950.

Degree of use	Number of farms (sample)	Percent of farms (sample)	Number of farms (county)
All farms selling sheep and lambs	118	100	654
Feeding constantly	35	29	190 1/
Feeding occasionally	55	47	307 2/
Not feeding	28	24	157 3/

1/ - 2/ - 3/ Estimate based on sample percentages.

Explanation of how to get the data for above tables:

Of the 1,114 census farms in X county in 1950, 59 percent reported selling sheep and lambs. In a representative sample of 202 of the county's farms, we find approximately the same percentage (58%) selling sheep and lambs.

The survey revealed that only 29 percent of the sample farms had fully adopted the recommended practice of feeding phenothiazine and salt to control internal parasites.

Since a sample is representative, we can apply the sample percentages to the county as a whole. Multiplying the number of county farms selling sheep and lambs (654) by the percentage of sample farms that had not completely adopted the recommended practice (71%) we find that our potential audience is approximately 454 farms. Of these, 307 are partial adopters.

2. Interpretation in line with standards to be attained.

Facts must also be analyzed in terms of the standards to be attained.

Example: Adequate breakfasts may be a goal for 4-H Club members. 4-H Club members may be asked to keep a record of what they ate for breakfast for a definite period of time. The answers may be

20 percent ate ham
60 percent ate eggs
98 percent age bread
30 percent ate jelly
75 percent ate cereal with milk
50 percent drank milk

These figures alone would not give the answer as to whether club members were eating adequate breakfasts. The accepted standard for an adequate breakfast would probably be a fruit, bread or cereal, and an animal protein.

The figures would then need to be analyzed in terms of the number of members who ate all three foods recommended for an adequate breakfast. The results would be for club members only and not for a general population.

3. Interpretation in line with objectives or goals set.

Example 1: A group may set a goal to increase the membership 30 percent within a 12-month period. This would be relatively easy to measure. A check of the total number of members at the beginning and at the end of the period would need to be made and percentages figured. An error that is sometimes made is that new members are counted without considering the number who dropped out during the period.

Example 2: A goal may be set to increase the proportion of members who drink a quart of milk a day by 20 percent in six months. The number of members who drank a quart of milk at the beginning and at the end of the period would need to be determined. Then the percentage of increase could be calculated.

4. Interpretation by comparisons.

Comparisons may be made from time to time to determine progress or lack of progress in:

(a) One's own situation or for status at beginning and end of a program.

Example: Is the program reaching more people now than five years ago? Are more leaders assuming responsibility than five years ago?

(b) Progress in comparison with other like situations.

Example: Is the extension program in one county enrolling as high a percentage of the eligible boys and girls in 4-H Club work as another county?

How does the number of home visits, telephone calls, letters written or meetings held in one county, compare with another?

5. Interpretation in light of numbers who were "exposed" to or participated in program.

If specific programs are being evaluated, those people who have received information will be used as a basis for analyzing figures.

Example: Certain fertilizer practices are recommended in a county and the evaluation plan is designed to determine the effectiveness of the program. In this case, it must be determined how many people had received the information through any of the teaching methods used or from other people who received the information from extension agent. Then the number who had applied the practices for the first time as a result of the program would be determined.

6. Interpretation on basis of need or opportunity for use of practice or information.

Example 1: A check sheet containing several items to be checked to indicate interests may be used. One of the items might be children's clothing. The number who check children's clothing should be analyzed in terms of those women who sew for children. This, of course, implies that the right questions must be included in the collection of any data. For example, the question, "Do you sew for children?" may be more meaningful as a basis for analyzing data than the number of women with children. Some mothers who have children may not sew for them, while grandmothers or other relatives may do so.

Example 2: If a questionnaire is sent to a cross section of farmers and there are questions on dairying practices, those practices should be analyzed on the basis of the number of farmers who are dairy farmers; also whether or not they need to apply the practice or whether it is applicable to their farms.

Example 3: An agent may wish to know how many women have altered garments as a result of a program on altering garments. The number altering garments and using the information should be on the basis of those women who had garments needing alteration since the program; 586 women may have seen or heard the program but only 210 had garments that needed altering; 52 of the 210 may have altered garments and used the information. The conclusion would then be: 52 out of 210, or 25 percent of the women who had garments that needed altering, used the information. Of course, this would be only an immediate evaluation, as others may be able to use the information at future dates.

In summary, the points given in this discussion as a basis for interpretation of factual data are:

1. Potential numbers that can be or that need to be reached with program being studied.

2. Standards to be attained.

3. Objectives or goals set for specific program.

4. Number of people receiving information on practice being studied.

5. Number who need to apply the information or have an opportunity to use it.